CodeDoc for Real-Time Point-of-Care Emergencies

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ABSTRACT

Problem: Can documentation and synthesis of that data be done in time to positively impact immediate care, improve documentation, decrease time, error, and improve outcome? This poster presents the results of a pilot study that begins to address this question. **Method:** A Cross-over design compares manual 'code blue' documentation to CodeDoc®'s method. **Results:** CodeDoc cut documentation time almost in half with fewer errors. **Conclusion:** CodeDoc may have a critical role in improving emergency care.

BACKGROUND

For years both rescue workers and resuscitation researchers have been hampered by lack of real-time documentation. In particular, documenting arrests has the same problem. In a 1993 article entitled: "The Most Neglected Tool in EMS: The Clock", the author thought an answer to the problem was "computerized timecards" that "medics punch to effect real-time data entry" [1]. Various methods that have been tried in the past include cassette tape recording, transcription, bar coding, and locally designed flow sheets for handwritten documentation. Studies of transcription recordings found it to be too labor intensive and provide no feedback on the scene [2][3]. A study using bar codes during an arrest found the mean number of total errors per record for bar coding was 2.63 (+/-0.24) . while that for handwritten charts was 9.48 (+/- 0.30)[4]. Bar coding reduced error by capturing static events, but it could not synchronize and integrate data into summaries to help in medical decisions. In 1999 we began to developed CodeDoc, a Palm OS handheld software application for real-time monitoring and tracking of cardiopulmonary arrests. CodeDoc, is a 'docutimer' that automatically time stamps data as it is entered. It can recreate the sequence of data and summarizes for immediate utilization to help in medical decisions in real-time.

METHODS

To determine if the Palm OS application CodeDoc® could reduce documentation time and error, a pilot cross-over repeat measure design was used between two methods of documentation and two codes. Eight experienced EMS, first responders, were selected to participate. Two different code blue scenarios were tape recorded on a standard audio cassette. Each participant learned a handwritten method and CodeDoc®'s method. The same training time and practice was allotted for each method. One of the participants never used a PDA before so instruction started with how to operate a Palm m505. The pilot study assessed two objective measures: total time and omission error defined as total number of missed events. Printout time was included in the total time it took for each to complete a report using CodeDoc. Manually generated and CodeDoc generated reports were compared.

RESULTS

CodeDoc cut documentation time almost in half. For example, time range for the second code manually was 12-20 minutes with mean average of 14.1 minutes. Time range of the same code with CodeDoc was 5-8 minutes with mean average of 7.2. In 14 handwritten reports, there were 193 omission errors (13.78 errors per report). For the same codes done with CodeDoc, there was a mean average of 5.5 errors per report.

CONCLUSION

Although this pilot assessed only measures of time and error, CodeDoc® may improve the way medical documentation is done if further testing is consistent with these early findings.

References

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